

Appl. No. 09/885,354  
Amdt. dated May 26, 2004  
Reply to Office Action of Jan. 26, 2004  
Page 5

**IN THE CLAIMS:**

Please **AMEND** the claims as follows:

Claims 1-9 (Canceled)

10. (Currently Amended) The circuit connector assembly of ~~Claim 4~~ Claim 14, wherein the first and the second thermoplastic materials are each selected from the group consisting of polyurethane and polysulfone.

11. (Currently Amended) The circuit connector assembly of ~~Claim 4~~ Claim 14, wherein the core element portion is formed using an injection mold process.

12. (Currently Amended) The circuit connector assembly of ~~Claim 4~~ Claim 14, wherein the core element portion is formed using a machining process.

Claim 13 (Canceled)

14. (Currently Amended) A connector assembly to be coupled to an implantable medical device, comprising:

a core portion formed of a first thermoplastic material shaped to receive a connector member for receiving a lead;

a first circuit element positioned adjacent to the core element and having a first portion extending within the core portion and a second portion extending outward from the core portion; and

an overmold portion formed of a second thermoplastic material adjacent to extend over and adhere to at least part of the core portion and at least part the second portion of the first circuit element through injection molding of the second thermoplastic material.

Appl. No. 09/885,354

Amdt. dated May 26, 2004

Reply to Office Action of Jan. 26, 2004

Page 6

15. (Original) The connector assembly of Claim 14, wherein the surface of the core portion includes predetermined ridge members to enhance bonding of the core portion to the overmold portion.

16. (Original) The connector assembly of Claim 14, wherein the surface of the core portion includes predetermined groove members to position at least a portion of the at least one circuit element in a predetermined location on the surface of the core portion.

Claims 17-19 (Canceled)

20. (Original) The connector assembly of Claim 19, ~~and further including wherein the core portion is further shaped to receive a set-screw member loaded into the second receptacle.~~

21. (Original) The connector assembly of Claim 20, wherein the first circuit element is coupled to at least one of the connector member and the set-screw member.

Claims 22-25. (Canceled)

26. (Original) The connector assembly of Claim 14, wherein the at least one circuit element includes multiple conductive traces.

27. (Currently Amended) The connector assembly of Claim 23 26, wherein the multiple conductive traces are electrically isolated.

Appl. No. 09/885,354

Amdt. dated May 26, 2004

Reply to Office Action of Jan. 26, 2004

Pag 7

28. (Original) The circuit assembly of Claim 14, wherein the mass of the core portion is less than fifty percent of the mass of the overmold portion.

29. (Original) The circuit assembly of Claim 14, wherein the mass of the core portion is less than thirty percent of the mass of the overmold portion.

30. (Currently Amended) A process for making a circuit connector assembly for use in an implantable medical device, comprising the ~~methods of~~:

a-) forming a core element of a first thermoplastic material;

b-) positioning at least one circuit element adjacent to the core element and having a first portion extending within the core element and a second portion extending outward from the core element; and

e-) forming an overmold structure of a second thermoplastic material over to extend over and adhere to at least a portion of the core element and at least a portion of the at least one circuit element, the forming of the overmold structure including heating and injecting the second thermoplastic material to form the connector assembly to be electrically and mechanically coupled to the implantable medical device.

31. (Currently Amended) The process of Claim 30, wherein ~~method a.)~~ includes the ~~method of forming~~ the core element is formed using an injection mold process.

32. (Currently Amended) The process of Claim 30, wherein ~~method a.)~~ includes the ~~method of forming~~ the core element is formed using a machining process.

Appl. No. 09/885,354

Amdt. dated May 26, 2004

Reply to Office Action of Jan. 26, 2004

Page 8

33. (Currently Amended) The process of Claim 30, wherein ~~method a.-)~~ includes the method of forming a core element includes forming ridges on the surface of the core element.
34. (Currently Amended) The process of Claim 33, wherein ~~method b.-)~~ includes the method of positioning at least one circuit element includes aligning the circuit element on the surface of the core element using at least one of the ridges as a guide.
35. (Currently Amended) The process of Claim 30, wherein ~~method c.-)~~ includes the method of forming an overmold structure further comprises:  
e1-) positioning the core element and the at least one circuit element in a mold; and  
e2-) injecting thermoplastic material into the mold.
36. (Currently Amended) The process of Claim 35, wherein ~~step c.-)~~ further includes the method of forming an overmold structure further comprises heating the core element prior to performing the injecting method.
37. (Currently Amended) The process of Claim 33, wherein ~~method c.-)~~ includes the method of forming an overmold structure further comprises melting at least one of the ridges on the surface of the core element.
38. (Currently Amended) The process of Claim 30, wherein ~~method c.-)~~ includes forming an overmold structure further comprises encapsulating the core element within the overmold structure.

Appl. No. 09/885,354  
Amdt. dated May 26, 2004  
Reply to Office Action of Jan. 26, 2004  
Page 9

39. (Currently Amended) The process of Claim 30, wherein ~~method a.)~~ forming a core element includes forming the core element to have a mass that is less than half of the mass of the overmold structure.
40. (Currently Amended) The process of Claim 30, wherein ~~method a.)~~ forming a core element includes forming the core element to have a mass that is less than thirty percent of the mass of the overmold structure.
41. (Currently Amended) The process of Claim 30, and further including the step of positioning at least one connector member adjacent to the core element prior to ~~performing method e.)~~ forming an overmold structure.
42. (Currently Amended) The process of Claim 41, wherein ~~method a.)~~ forming a core element includes ~~the method of~~ forming the core element to have a receptacle to receive the at least one connector member.
43. (Currently Amended) The process of Claim 42, wherein ~~method b.)~~ positioning at least one circuit element includes ~~the method of~~ electrically coupling the at least one connector member to the at least one circuit element.
44. (Currently Amended) The process of Claim 43, wherein ~~method b.)~~ positioning at least one circuit element includes ~~the method of~~ performing the electrical coupling by soldering or welding the at least one connector member to the at least one circuit element.
45. (Currently Amended) The process of Claim 30, wherein the at least one circuit element includes multiple conductive traces, and further ~~including the method of~~ further comprising removing a selected portion of the multiple conductive traces.

Appl. No. 09/885,354

Amdt. dated May 26, 2004

Reply to Office Action of Jan. 26, 2004

Pag 10

46. (Currently Amended) The process of Claim 35, wherein the mold includes at least one coupling member to couple to the core element, and wherein ~~method e-)~~ forming an overmold structure includes ~~the method of coupling the at least one coupling member to the core element prior to performing the injecting method~~ injecting thermoplastic material into the mold.

47. (Currently Amended) The process of Claim 35, wherein the mold includes at least one coupling member to couple to the circuit element, and wherein ~~method e-)~~ forming an overmold structure includes ~~the step of coupling the at least one coupling member to the circuit element.~~

48. (Currently Amended) The process of Claim 47, wherein ~~the method of coupling the at least one coupling member to the circuit element includes the method of~~ suspending the core element within a cavity of the mold.

Please **ADD** the following new claims:

49. (NEW) A process for making a circuit assembly for use in an implantable medical device, comprising:

- forming a core element of thermoplastic material;
- positioning at least one circuit element adjacent to the core element; and
- forming an overmold structure of thermoplastic material over at least a portion of the core element and at least a portion of the circuit element, wherein forming an overmold structure includes positioning the core element and the at least one circuit element in a mold, injecting thermoplastic material into the mold, and heating the core element prior to performing the injecting method.

Appl. No. 09/885,354  
Amdt. dated May 26, 2004  
Reply to Office Action of Jan. 26, 2004  
Page 11

50. (NEW) A process for making a circuit assembly for use in an implantable medical device, comprising:

- forming a core element of thermoplastic material;
- positioning at least one circuit element adjacent to the core element; and
- forming an overmold structure of thermoplastic material over at least a portion of the core element and at least a portion of the circuit element, wherein forming a core element includes forming ridges on the surface of the core element, and forming an overmold structure includes melting at least one of the ridges on the surface of the core element.

51. (NEW) A process for making a circuit assembly for use in an implantable medical device, comprising:

- forming a core element of thermoplastic material;
- positioning at least one circuit element adjacent to the core element; and
- forming an overmold structure of thermoplastic material over at least a portion of the core element and at least a portion of the circuit element, wherein forming an overmold structure includes positioning the core element and the at least one circuit element in a mold and injecting thermoplastic material into the mold, the mold including at least one coupling member to couple to the core element, and wherein forming an overmold structure includes coupling the at least one coupling member to the core element prior to performing the injecting method.

52. (NEW) A process for making a circuit assembly for use in an implantable medical device, comprising:

- forming a core element of thermoplastic material;
- positioning at least one circuit element adjacent to the core element; and
- forming an overmold structure of thermoplastic material over at least a portion of the core element and at least a portion of the circuit element, wherein

Appl. No. 09/885,354

Amdt. dated May 26, 2004

Reply to Office Action of Jan. 26, 2004

Page 12

forming an overmold structure includes positioning the core element and the at least one circuit element in a mold and injecting thermoplastic material into the mold, the mold including at least one coupling member to couple to the at least one circuit element, and wherein forming an overmold structure includes coupling the at least one coupling member to the circuit element.

53. (NEW) The connector assembly of claim 14, further comprising:

a mold assembly having a bottom portion and a top portion forming an aperture having an interior surface shaped to receive the core portion and the first circuit element; and

a pin member insertable within the connector member, the pin member positioning the core portion within the aperture to be spaced from the interior surface of the mold assembly and preventing injection of the second thermoplastic material within the connector member.